

REMARKS

I. Introduction

Applicant has reviewed the detailed Office Action mailed 11/09/01 (paper no. 8) and has amended claims 12-22. No new claims have been added. Thus, claims 12-22 are pending. Applicant requests reconsideration of the pending claims in view of the above amendments and the following remarks.

By action taken here, Applicant in no way intends to surrender any range of equivalents beyond that needed to patentably distinguish the claimed invention as a whole over the prior art. Applicant expressly reserves all such equivalents that may fall in the range between Applicant's literal claim recitations and combinations taught or suggested by the prior art.

II. Objection to the Specification

The Examiner objected to the specification under 37 CFR 1.17 for failing to describe "any damping means or method." Applicants respectfully disagree. Paragraph 2 of the "Detailed Description of the Preferred Embodiments," on page 4 of the specification, describes the components of brake pedal 1 as including a static portion (spring) and a speed-responsive portion (damping effect). As is known in the art, minimizing the damping effect on a brake pedal may be accomplished by varying the hydraulic effective cross section of the brake pedal, as described in paragraph 2 and also in the first full paragraph on page 6 of the specification. Accordingly, withdrawal of the objection is respectfully requested.

III. Rejections under 35 U.S.C. § 112, first paragraph

The Examiner rejected claims 12-22 under 35 U.S.C. § 112, first paragraph, as non-enabling. Claims 12-22 have been amended such that the specification as filed would enable one skilled in the art to make and/or use the claimed invention.

For example, claim 12 is fully supported by the first four paragraphs of the "Detail Description of the Preferred Embodiments" located on page 4 of the specification.

In another example, claim 16 is fully supported by the last paragraph on page 7 and the first full paragraph on page 8 of the specification.

Accordingly, claims 12-22 as amended are patentable and withdrawal of the § 112,

first paragraph, rejection is respectfully requested.

IV. Rejections under 35 U.S.C. § 112, second paragraph

The Examiner rejected claims 12-15, 20 and 22 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. More specifically, the Examiner asserted that claim 12 is indefinite for reciting “a control unit dampening effect or the counterforce of a brake pedal.” Applicant has amended claim 12 to recite “a control unit for reducing at least one of a damping effect and a counterforce on a brake pedal,” as fully supported by the specification. Therefore, withdrawal of the § 112, second paragraph, rejection with respect to claim 12, and the claims that depend therefrom, is respectfully requested.

Additionally, the Examiner asserted that claims 20 and 22 are indefinite for reciting the phrase “taking into account.” Applicant has amended claims 20 and 22 to remove this phrase. Therefore, withdrawal of the § 112, second paragraph, rejection with respect to claims 20 and 22 is respectfully requested.

V. Rejections under 35 U.S.C. § 102

The Examiner rejected claim 12-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,505,526 to Michaels and under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,099,086 to Feigel et al. (“Feigel”). For at least the following reasons, this rejection is respectfully traversed.

A. Regarding the Examiner’s assertion that claims 12, 19, 20 and 22 are anticipated by Michaels, firstly, nowhere does Michaels teach or suggest a device or method for reducing a damping effect or a counterforce on a brake pedal, as recited by the Applicant in amended claims 12, 19, 20 and 22. Instead, Michaels discloses an apparatus and method for building-up brake pressure at a wheel brake by virtue of stronger brake pressure boosting that is adjusted by means of the brake pressure booster, not by a reduction in the damping effect or counterforce on the brake pedal. *See, for example, Michaels, column 5, lines 11-13.*

Secondly, unlike the Applicant’s claimed invention as recited in amended claims 16 and 21, nowhere does Michaels teach or suggest a device or method for actuating a brake

system wherein the brake force acting in the system corresponds to a ratio between at least one of the determined actuating travel, the actuation speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system. Instead, Michaels teaches adjusting the pressure originating from the brake pressure booster in response to a result of a comparison between a design value associated with instantaneous actuating speed of the brake pedal and the actual value of brake pressure measured at the wheel brake, so that the two values converge. *See Michaels, column 4, line 63 through column 5, line 4.*

B. Regarding the Examiner's assertion that claims 12, 19, 20 and 22 are anticipated by Feigel, firstly, nowhere does Feigel teach or suggest a device or method for reducing a damping effect or a counterforce on a brake pedal, as recited by the Applicant in amended claims 12, 19, 20 and 22. Secondly, unlike the Applicant's claimed invention as recited in amended claims 16 and 21, nowhere does Feigel teach or suggest a device or method for actuating a brake system wherein the brake force acting in the system corresponds to a ratio between at least one of the determined actuating travel, the actuation speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system. Instead, Feigel teaches a setpoint generator that utilizes signals received from two parallelly connected sensors to form a single setpoint signal for control of an electric brake system. *See Feigel, column 4, lines 1-5.* Moreover, the excerpt from the Feigel specification cited by the Examiner, namely column 4, lines 5-11, merely teaches a "countercurrent weighting" wherein a dominant signal is weighted more heavily in the generation of the setpoint signal.

Similarly, neither Feigel nor Michaels anticipate the Applicant's invention as recited in the dependent claims. For example, regarding amended claims 13 and 15, nowhere does Feigel or Michaels disclose a device or method for reducing a damping effect or a counterforce on a brake pedal wherein the damping effect and counterforce depend on at least one of brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation. Moreover, nowhere does Feigel or Michaels teach reducing the damping effect or counterforce when at least one of the sensed brake pedal travel, the speed of brake pedal actuation and the acceleration of brake pedal actuation exceeds a threshold value.

Attorney Docket: 64098-0844 (AP9265)
S.N.: 09/701,910

Claims 12-22 are therefore patentable, and withdrawal of the § 102(b) and § 102(e) rejections are respectfully requested.

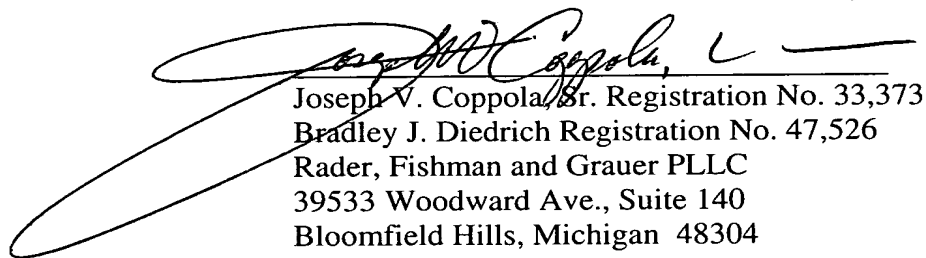
VI. Conclusion

For at least the above reasons, Applicant respectfully submits that the present invention, as claimed, is patentable over the prior art. If the Examiner has any issues that he believes can be expedited by a telephone conference, he is encouraged to telephone the undersigned representative at his earliest convenience.

It is believed that any additional fees due with respect to this paper have already been identified. However, if any additional fees are required in connection with the filing of this paper, permission is given to charge account number 18-0013 in the name of Rader, Fishman and Grauer PLLC.

Respectfully submitted,

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MARKED UP VERSION OF ALL AMENDED CLAIMS

12. (Once Amended) A device [Device] for actuating a brake system to accomplish a brake assist function, comprising:

a control unit for reducing at least one of a damping effect [or] and a [the] counterforce on [of] a brake pedal when [a] the brake assist function is activated,

a sensor for sensing brake pedal [travel] actuation, and

[means, coupled to said sensing means, for] wherein the sensed brake pedal actuation is used by the control unit to determine [determining] the vehicle deceleration [which] that is to be effected by the brake system.

13. (Once Amended) The device [Device] as claimed in claim 12, wherein the counterforce is a function of at least one of brake pedal travel, the speed of brake pedal [travel] actuation and the acceleration of brake pedal acutation [or the acceleration of application of the driver's foot for braking and is adjusted to a lower amount], and wherein the counterforce is reduced when at least one of the brake pedal travel, the speed of brake pedal actuation [application or] and the acceleration of brake pedal actuation exceeds a threshold value [application of the driver is high].

14. (Once Amended) The device [Device] as claimed in claim 12, wherein the counterforce is responsive to pedal travel and rises with an increasing actuating travel.

15. (Once Amended) The device [Device] as claimed in claim 12, wherein the damping effect depends on at least one of brake pedal travel, the speed of [application or] brake pedal actuation and the acceleration of brake pedal actuation, and wherein the damping effect is reduced [application of the driver's foot for braking and is adjusted to a lower amount] when at least one of the sensed brake pedal travel, the speed of brake pedal actuation and [application and/or] the acceleration of brake pedal actuation exceeds a threshold value [application is high].

16. (Once Amended) A device [Device] for actuating a brake system to accomplish a brake assist function, comprising:

a control unit for changing a brake force acting in the system as a function of at least one of an actuating travel of a brake pedal as sensed by a brake pedal sensor, an actuating speed of the brake pedal and [or] an acceleration of actuation of [a] the brake pedal when the brake assist function is activated, and wherein the brake force acting in the system corresponds to a ratio between at least one of the determined actuating travel, the actuation speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system.

17. (Once Amended) The device [Device] as claimed in claim 16, wherein the brake force acting in the system is augmented with a rising actuating travel, a rising actuating speed, or a rising acceleration of actuation.

18. (Once Amended) The device [Device] as claimed in claim 16, wherein the brake force acting in the system is reduced continuously to a normal brake force when the actuating travel decreases.

19. (Once Amended) A device [Device] for actuating a vehicle brake system to accomplish a brake assist function, comprising:

a control unit for reducing at least one of a damping effect [or] and a counterforce [of] on a brake pedal when the brake assist function is activated,

a sensor for detecting [the resulting actuating travel of the] brake pedal actuation, wherein the control unit is coupled to the sensor for determining the vehicle deceleration to be effected by the brake system, and wherein the control unit changes a brake force acting in the brake system depending on [the] at least one of an actuating travel, an actuating speed [or] and an acceleration of actuation of the brake pedal when the brake assist function is activated, the [said] brake force acting in the system corresponding to a ratio between at least one of the [sensed] actuating travel, the actuating speed and the acceleration of actuation of the brake pedal, and the deceleration to be effected by the brake system.

20. (Once Amended) A method [Method] for actuating a vehicle brake system to accomplish a brake assist function, [wherein a control unit executes the following steps] comprising the steps of:

reducing at least one of a damping effect [or] and a counterforce [of] on a brake pedal when the brake assist function is activated, and

[taking into account the resulting actuating travel of the brake pedal which is sensed by way of a sensor of the brake pedal for] determining the vehicle deceleration which is to be effected by the brake system as a function of brake pedal actuation.

21. (Once Amended) A method [Method] for actuating a vehicle brake system to accomplish a brake assist function, comprising the steps of:

changing a brake force acting in the system [depending on] as a function of at least one of :

- iv. an actuating travel of a brake pedal [sensed by a sensor],
- v. an actuating speed of the brake pedal and,
- vi. [or] an acceleration of actuation of [a] the brake pedal when the brake assist function is activated, and

wherein the brake force acting in the system corresponds to a ratio between at least one of the [determined] actuating travel, the actuating speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system.

22. (Once Amended) A method [Method] for actuating a vehicle brake system to accomplish a brake assist function, [wherein a control unit executes the following steps] comprising the steps of:

reducing at least one of a damping effect [or] and a counterforce [of] on a brake pedal when the brake assist function is activated, [and]

[taking into account the resulting actuating travel of the brake pedal which is sensed by way of a sensor of the brake pedal for] determining the vehicle deceleration [which] that is to be effected by the brake system as a function of brake pedal actuation, and

changing a brake force acting in the system depending on [the] at least one of actuating travel, [the] actuating speed [or the] and acceleration of actuation of [a] the brake

Attorney Docket: 64098-0844 (AP9265)
S.N.: 09/701,910

pedal when the brake assist function is activated, [and] wherein the brake force acting in the system corresponds to a ratio between at least one of the [determined] actuating travel, the actuating speed and the acceleration of actuation of the brake pedal, and a vehicle deceleration to be effected by the brake system.

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